

REMARKS

The Office Action requires restriction of the claims to one of the following:

Group I, claim 1, drawn to a method for inhibiting the lethal effect of expressing an otherwise lethal protein in a cell;

Group II, claim(s) 2-16, drawn to a method for identifying compounds which inhibit or enhance expression or activity of proteins which are lethal to a cell, tissue or organism;

Group III, claim(s) 17 and 18, drawn to a compound identifiable as an inhibitor or an enhancer of expression or activity of an otherwise lethal protein;

Group IV, claim(s) 23, drawn to a method for monitoring the severity of a disease condition;

Group V, claim(s) 24 and 45, drawn to a nucleic acid molecule encoding a rat Gas1 according to SEQ ID NO: 2 or variant thereof;

Group VI, claim(s) 25-28 and 34-40, drawn to a nucleic acid encoding a protein comprising the amino acid sequence according to SEQ ID NO: 4, or a variant thereof;

Group VII, claim(s) 29, 30 and 45, drawn to an antisense molecule capable of hybridizing to the nucleic acid sequence of claim 25 under high stringency conditions wherein the antisense molecule comprises SEQ ID NO: 3;

Group VIII, claim(s) 29, 30 and 45, drawn to an antisense molecule capable of hybridizing to the nucleic acid sequence of claim 25 under high stringency conditions wherein the antisense molecule comprises SEQ ID NO: 5;

GROUP IX, claim(s) 31-33 and 45, drawn to a protein encoded by SEQ ID NO: 1;

Group X, claim(s) 41 and 42, drawn to a method identifying compounds capable of preventing or accelerating Gas1 mediated cell death;

Group XI, claim(s) 43 and 44, drawn to a compound identifiable as an inhibitor or an accelerator of cell death;

Group XII, claim(s) 52 and 53, drawn to an antibody;

Group XIII, claim(s) 54, 22 and 48, drawn to a method for decreasing the expression of a protein that is lethal to a cell, wherein the cell is associated with the neurological disease Parkinson's disease;

Group XIV, claim(s) 54, 22 and 48, drawn to a method for decreasing the expression of a protein that is lethal to a cell, wherein the cell is associated with the neurological disease Alzheimer's disease;

Group XV, claim(s) 54, 22 and 48, drawn to a method for decreasing the expression of a protein that is lethal to a cell, wherein the cell is associated with a neurological disease Huntington's disease;

Group XVI, claim(s) 54, 22 and 48, drawn to a method for decreasing the expression of a protein that is lethal to a cell, wherein the cell is associated with the neurological disease amyotrophic lateral sclerosis;

Group XVII, claim(s) 54, 22 and 48, drawn to a method for decreasing the expression of a protein that is lethal to a cell, wherein the cell is associated with a neurological disease caused by thrombosis or cerebral trauma;

Group XVIII, claim(s) 54, 22 and 49, drawn to a method for decreasing the expression of a protein that is lethal to a cell, wherein the cell is associated with a cardiovascular disorder;

Group XIX, claim(s) 54, 22 and 50, drawn to a method for decreasing the expression of a protein that is lethal to a cell, wherein the cell is associated with an autoimmune disorder;

Group XX, claim(s) 54, 22 and 51, drawn to a method for decreasing the expression of a protein that is lethal to a cell, wherein the cell is associated with a neuroendocrine disorder; and

Group XXI, claim(s) 54, 22 drawn to a method for decreasing the expression of a protein that is lethal to a cell, wherein the cell is associated with cancer.

In response, Applicants elect Group I, claim 1, with traverse. Applicants reserve the right to file divisional application(s) on the non-elected claims. Applicants respectfully submit that the inventions listed as Groups I and XIII to XXI relate to a single inventive concept under PCT Rule 13.1. Each of Groups I and XIII to XXI regard inhibiting expression of Gas1 to inhibit the lethal effect of an otherwise lethal protein. As disclosed in the present specification,

[T]he present inventors have surprisingly found that Gas1 overexpression induces cell death in various cell types, such as neurons and neuroblastoma cell lines and that Gas1 is responsible for the induction of apoptic activity in a cell.

Based upon the surprising relationship of Gas1 expression and apoptosis the present inventors have developed methods to study the effects of expressing proteins in a cell which are normally lethal to the cell by inhibiting expression or activity of either the Gas1 protein or a protein in the signal transduction pathway of which Gas1 is a component.

See page 1, line 35 to page 2, line 10. See also Example 2 at page 22, line 29 to page 24, line 18.

The specification also teaches:

[A]n animal having expression of the Gas1 protein inhibited may be utilized as a model for expression of otherwise lethal proteins in accordance with the methods of the invention and for identifying potential therapeutic agents capable of inhibiting or enhancing expression or activity of the otherwise lethal protein.

See page 4, lines 23-29.

Reconsideration and withdrawal of the requirement for restriction are respectfully requested.

The Office Action also requires election of species as follows:

The species of claim 9: glutamate, NMDA, AMPA, kainite receptor.

The species of claim 10: type 1 to 8 metabotropic receptor.

The species of claim 13: ribozymes or DNAzyme activity.

In response, Applicants provisionally elect claim 9: NMDA; claim 10: type 1 metabotropic receptor; and claim 13: ribozyme activity, with traverse. Applicants reserve the right to file divisional application(s) on the non-elected claims. Applicants respectfully submit that the otherwise lethal proteins of claims 9 and 10 relate to a single inventive concept under PCT Rule 13.1. As disclosed in the present specification,

Upon observing that the stable expression of high levels of Gas1 complementary messenger ... makes these cells more resistant to external harmful stimuli, it was possible to use these cells for forced expression of lethal genes that would induce cell death in cells but that would not cause death in these Gas1 expressing protected lines. An example of the possible application of this protected system (NB69-Gas1) is the overexpression of the glutamate type I metabotropic receptor (mGluR-I)... The example presented for mGluR-I is only one of the multiple possibilities of using Gas1 inhibition to achieve stable expression

systems for genes that are normally detrimental to the survival of a cell. **[List of additional lethal proteins that may be evaluated omitted.]**

See page 32, lines 4-31.

Reconsideration and withdrawal of the election of species requirement are respectfully requested.

Early consideration and prompt allowance of the pending claims are respectfully requested. Should the Office require anything further, it is invited to contact Applicants' representative at the telephone number listed below.

Respectfully submitted,

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